



Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact support@jstor.org.

GEOGRAPHICAL RECORD

THE AMERICAN GEOGRAPHICAL SOCIETY

Relations Between the Society and the Association of American Geographers. The Councils of the American Geographical Society and the Association of American Geographers have agreed to cooperate in various ways that will be helpful, it is believed, to their work. The cost of printing the *Annals* of the Association is assumed by the Society. A copy of this annual volume will be mailed by the Society to each of its members and the *Bulletin* will be sent regularly to each member of the Association. All sums received by the Association from the sale of the *Annals* will be paid over to the Society, the fund to be open to receive further contributions, the whole to be devoted to such projects for geographical research or exploration as are approved by a joint Committee of the two organizations. Other phases of cooperation, not yet passed upon, may be considered later.

The Charles P. Daly Medal Presented to A. H. Brooks. At the special inter-monthly meeting of the Society on Tuesday evening, April 8, the Charles P. Daly Medal for Geographical Research was presented to Mr. Alfred Hulse Brooks of the U. S. Geological Survey, Geologist in charge of the Division of Alaskan Mineral Resources since 1903. Councillor Holbrook, chairman of the meeting, in presenting the medal, referred to the many and important contributions which Mr. Brooks and the scientific staff under his direction have made to our knowledge of the geography of Alaska and the distribution of its resources, to the printed results of their work largely contributed by Mr. Brooks and to the map of the Territory prepared under his direction and accepted the world over as the standard map of Alaska.

The medal is thus inscribed: "Awarded to Alfred Hulse Brooks in Recognition of the Excellence and Importance of his Work in the Exploration and Mapping of Alaska."

Upon receiving the medal Mr. Brooks made these remarks:

"The award of the Charles P. Daly Medal, Mr. Chairman, is by far the greatest honor which has come to me. Recalling the achievements of the group of distinguished geographers, from the discoverer of the North Pole to the discoverer of the South Pole, who have received this medal, my own contributions to exploration appear but insignificant. I must therefore regard this award as made not so much for any personal merit, but rather as a recognition of the value of the geographical work of my colleagues and myself in exploring Alaska.

"The exploration of Alaska was begun by the ill-fated Vitus Bering nearly one and three-quarters century ago, but the first real scientific investigation of the territory was inaugurated by Capt. James Cook during his remarkable voyage made thirty years later. Inspired by Cook, the navigators of several nationalities extended the knowledge of the shore line, but for nearly a century after Bering's death knowledge of the interior was limited to the random notes of the fur trader.

"Credit for the first scientific exploration of the vast inland region belongs to Dr. William H. Dall, Robert Kennicott, and their colleagues of the Western Union Telegraph Survey. After our acquisition of Alaska the charting and investigation of its shore line was prosecuted with vigor—a field of scientific inquiry in which Prof. George Davidson was especially conspicuous. Meanwhile, exploration of the interior lagged, though a number of journeys along the larger waterways were made which added much to geographical knowledge. Among these the exploration of Major Henry T. Allen was the most remarkable.

"This brief review brings us down to the modern epoch of exploration, begun under federal auspices some sixteen years ago and inspired largely by the popular interest excited through the discovery of the Klondike gold. In this epoch of exploration the geologists and engineers of the federal Geological Survey have played a conspicuous part. Perhaps the most notable result of these investigations is the fact that the pioneers of this northland have come to look to the scientist for guidance in their efforts to open up an empire.

"While much has been accomplished in the exploration of Alaska, much remains to be done. Over one-quarter of this, our largest and most valuable outlying possession, still remains an almost unknown land, while over two-thirds is almost unsurveyed. There is, therefore, in this northern land a field of geographical research for the generation to come. I earnestly hope and believe, Mr. Chairman, that your Society will in the future, as it has in the past, take a part in this work.

"In receiving this medal, Mr. Chairman, I again thank you most earnestly, not only for myself but also in behalf of my colleagues who must share with me the honor as they have the arduous work which has led to this award. I am sure that this recognition will inspire us to continue our efforts to increase the geographical knowledge of Alaska."

Additions to Our Map Collection. A number of important additions to the Society's map collection have recently been made in the way of complete sets of large-scale topographic maps issued by foreign governments. Most of these sets have been presented by home and colonial topographic bureaus. The following are some of the most noteworthy of these acquisitions:

The colored edition of the one inch to a mile British Ordnance Maps; the 1:100,000 topographic map of Germany published by the Kgl. Preuss. Landesaufnahme; the 1:100,000 map of Belgium in 26 sheets published by the Institut Cartographique Militaire at La Cambre; the 1:100,000 map of Portugal published by the Direcção dos Trabalhos Geodesicos y Topograficos in Lisbon; the 1:100,000 map of Norway published by the Norges Geografiske Opmaalning; the topographic map of Iceland published on a scale of 1:50,000 by the Danish General Staff; the topographic sheets issued on a scale of 1:50,000 by the Bulgarian War Department and the 1:100,000 map of Rumania prepared by the Rumanian Staff.

Sets of the published sheets of the inch to a mile topographic map of Canada, the inch to three miles sectional map of Canada and the 1:100,000 map of Mexico published by the Comisión Geográfica-Exploradora have likewise been received from the issuing bureaus. The 151-sheet map of Asia published by the Japanese Government and the topographic and geological maps of the Imperial Geological Survey of Japan have also been acquired as well as various sets published by French and British colonial surveys such as the Section Cartographique du Gouvernement Général de l'Algérie and the Anglo-Egyptian Sudan.

The 1:50,000 sheets of the Atlas Topographique de la Suisse have also been added to the Society's collections. The 1:1,000,000 maps of Asia issued by the Service Géographique de l'Armée and the Kgl. Preuss. Landesaufnahme have been completed by the acquisition of the missing sheets. The Indian Survey kindly forwarded the lacking sheets of the 1:1,000,000 map of India and adjacent countries and the Geographical Section of the British General Staff contributed its excellent series of 1:1,000,000 maps of Africa.

A photographic reproduction of Cabot's large world map of 1544 has been added to the Society's collections of reproductions of ancient maps. Only one copy of the original is known. It is in the Bibliothèque Nationale in Paris where it has been part of a collection in the Cabinet Géographique since 1844; in which year it was purchased for 4,000 francs by the French Government after having been accidentally discovered in the house of a Bavarian priest. The map is the only one that may be ascribed to Cabot although a number of separate references to the explorer's lost maps can be found in various historical documents.

The map is made up of four separately printed sections pasted together on pasteboard. It bears no name, title or date. The legend which is pasted on both sides, however, says that it was compiled by Cabot in 1544. The inscriptions it contains and the long notes on either side of the planisphere contain information on the various countries of the world. The natural resources and exports to Europe from each are enumerated. Sailing directions and data on the discovery of many coasts and islands are also included. The western coast of North America above the peninsula of Lower California is not delineated. The map is ornamented in the usual fashion of the day with large heads of Aeolus in each corner, legends and cosmographical tables.

Meetings of the Society. A special inter-monthly meeting of the Society was held at the Engineering Societies Building, No. 29 West 39th Street, on

Tuesday, April 8, at 8.30 P. M. The Chair was occupied by Councillor Levi Holbrook, who introduced Mr. Vahan Cardashian, Counsel to the Ottoman Consulate-General. Mr. Cardashian addressed the Society on "The Ottoman Empire." Many lantern views were shown.

The last meeting of the Society before the summer recess was held at the Engineering Societies Building on the evening of April 22. The Chair was occupied by Recording Secretary Hamilton Fish Kean. The following persons recommended by the Council were elected to Fellowship:

Arthur John Farmer	D. B. Steinman
Rudyard Kipling	Charles P. Steinmetz
Donald B. MacMillan	Carl Stoeckel
Alvan Markle	James Streat
George Grant Mason	Stephen Dows Thaw
J. Victor Onativia, Jr.	Burton Merrill Varney
William M. Polk	Mrs. Anna M. von Zedlitz
Chester A. Reeds	Elmore A. Willets
Emile Rey	Frederick N. Willson
Theodore Roosevelt, Jr.	J. Howard Wilson
Charles F. Shaw	Will McClain Winton
Edwin R. A. Seligman	Richard P. Worrall
George O. Simmons	Charles H. Young
J. Noah H. Slee	

The Chairman then introduced Mr. Arthur Stanley Riggs, who addressed the Society on "The Philippines and the Filipinos," illustrating his interesting discourse with many lantern views.

NORTH AMERICA

Abstract of the Thirteenth Census. The Bureau of the Census has just issued a report in condensed form of the Thirteenth Census, 1910. It covers the four principal branches with which the census dealt—population, agriculture, manufactures, and mines and quarries. It is complete as to all subjects comprised under these four branches excepting those dealing with occupations and one or two minor inquiries relating to the population schedule. The exhaustive reports in the bulky volumes of the census are invaluable for minute reference but inconvenient for general use because the main results must be picked out from a mass of detail, and often the consultant is compelled to search through the several volumes for complete statistics. The abstract assembles in one place all the general results of the census. This small quarto volume of 569 pp. will be very convenient and useful for all ordinary purposes of consultation.

Water Power on the Middle Mississippi. The great dam across the Mississippi River at Keokuk, Ia., is now practically completed. The dam was built at this point because the Des Moines Rapids offer there exceptional facilities for the utilization of water power. In 1905, Congress authorized the Mississippi Power Co. to carry out the work. Many difficulties were encountered, but the Chief Engineer, Mr. Hugh L. Cooper, has been able to provide practical solutions for all problems. The dam is nine-tenths of a mile long and has much the appearance of a bridge, its 119 arched spans each being in fact a spillway, permitting the passage of water through the upper part of the spans which are fitted with sliding steel gates regulating the flow. The dam is built of solid concrete and its foundations are sunk five feet in the solid rock of the river bottom. The power house, nearly a third of a mile long, on the Iowa side of the river, contains turbine water wheels which are supplied with water through thirty arched portals. Each turbine has a normal water head of thirty-two feet and develops 10,000 horse power of electricity. An enormous lock, with greater lift than any at Panama, will permit the much more rapid passage of vessels than the three small locks that have hitherto been used. The dam will hold back the water for about sixty-five miles above its site, and through the slack water thus formed a navigable channel of not less than eight feet will be maintained at all times. It is believed that this great enterprise will bring about a large development of manufacturing in this part of the Mississippi Valley which, with river navigation to the Gulf of

Mexico, and the Panama Canal, will offer unsurpassed opportunities for world-wide commerce.

Local Climates in Utah. The larger characteristics of climate must be similar over areas which are subjected to the same general controls. Therefore it is true that few places really have their own individual climates in any distinctive sense. Local controls, however, do affect local climates in many smaller ways. Among these controls topography is naturally an important one.

Mr. J. C. Alter, of the United States Weather Bureau at Salt Lake City, has investigated "Some Effects of Surface Slope on Climate" in the Salt Lake Valley, south of Salt Lake City (*Monthly Weather Rev.*, Vol. 40, 1912, No. 6, p. 929), particularly at Wandamere, a suburb of Salt Lake City about five miles south and one mile east of the center of the city, and at East Mill Creek, near the Wasatch foothills, two miles east of Wandamere. At Wandamere there is opportunity for nocturnal drainage of cool air into the bottoms, while at East Mill Creek the orchards lie well above the level to which the cold imported air rises. Therefore the orchards at the latter place get an average of two weeks start over those at the former. There is a difference of 200 feet of elevation and of 14 days in the season. Therefore fruit ripens (roughly) one day earlier for each 14 feet of rise in elevation. Taking into consideration the daily march of temperatures in spring at Salt Lake City (1° rise in about 3 days), the author concludes that the 14 foot rise in elevation, equaling one day's advance in fruit, is equivalent to 0.3° F. increase in the daily mean temperature. Temperature records are not yet available for these two stations. This is, therefore, an interesting example of the use of phenological observations to help out meteorological records. R. DE C. WARD.

Fighting Frost. Dr. P. J. O'Gara, Special Meteorological Observer at Medford, Ore., is doing effective work in the local study of frost prevention and prediction. In *Bulletin No. 5*, issued from his office, entitled "The Prevention of Frost Injury in the Orchards of the Rogue River Valley, Oregon," is an excellent study of methods of frost fighting, a discussion of the weather conditions which accompany frost, and an account of the whole frost campaign. Among the illustrations, he shows the oil pots burning at night during the danger period. The best fuels for use in frost fighting are considered in *Bulletin No. 6*, "A Comparative Test of Fuel Oils and Appliances used in Orchard Heating to Prevent Frost Injury" (1912).

Prof. Henry J. Cox, of the U. S. Weather Bureau, has been making a field study of frost conditions in the cranberry marshes of Wisconsin, New Jersey and Massachusetts ("The Weather Bureau and the Cranberry Industry," *U. S. Dept. of Agric. Year Book for 1911*, pp. 211-222). As these three States produce an average of 75,000, 150,000 and 300,000 barrels of cranberries respectively a year, it is easy to see how important the question of frost protection becomes. Professor Cox's studies in Wisconsin have proved of great advantage to the growers there. R. DE C. WARD.

Neurasthenia and Climate in the United States. Dr. J. Madison Taylor, in a recent paper on "Neurasthenia in the United States" (*N. Y. Med. Journ.*, 1912), holds that "the fundamental agency in the production of nervous irritability, or subversion of vital energies, is to be found in peculiarities of climate not adequately reckoned with, and their corollary, careless omissions to observe economic modes of life, whereby the hurtfulness of local climatic conditions can be escaped." This statement the author believes to be true for blonds, in particular, and in this view he is in accord with the opinion which has been so strongly advocated by Col. Charles E. Woodruff, U. S. A., during the past few years. In the hot summers of the United States, the glare of the sunshine, and the rapid temperature and humidity changes, Dr. Taylor sees good reason for a greater prevalence of neurasthenia than in most of the European countries from which our people have come. He believes that we should adapt ourselves to our summer conditions by changing our working hours, beginning earlier and allowing time for a siesta; children should be kept under shade during the noon hours and encouraged to sleep; playgrounds ought to be covered and cool baths provided; our clothing should be adapted to our tropical summer climate; houses should be kept cool by fans, awnings, etc. "By such means as these," Dr. Taylor believes, "may we confidently expect large economies in health and invigoration." R. DE C. WARD.

Colima in Eruption. The Volcano of Colima in the State of Jalisco, Mexico, is reported to have been in violent eruption on Jan. 20. From all accounts the eruption was chiefly in the form of gases and volcanic ashes, which fell over a wide area and, in places near the volcano, to a depth of several feet. Ashes fell as far north as Guadalajara, a distance of 100 miles.

SOUTH AMERICA

German Steamers on South American Rivers. A German company has been formed to run a service of cargo boats on the rivers La Plata, Paraná and Paraguay. The first boat, 800 tons, has arrived at Montevideo. It has a speed of nine knots an hour. The fleet will consist of four river steamers, four lighters of 500 tons each and an ocean going tug. All will sail under the Uruguayan flag.

Earthquakes in South America. A violent earthquake occurred at Guayaquil, Ecuador, at 9.40 P. M. on Feb. 22. The panic-stricken people rushed into the streets. The first shock lasted more than a minute and was followed by lighter after-shocks during the night of Feb. 22 and on the 23d. The city of Guayaquil is built upon low flat ground on the west bank of Rio Guayas, near and lapping up against the base of the Cerro de Santa Ana, a low Cretaceous hill. This earthquake was felt generally throughout Ecuador. It was most severe in the provinces of Loja, Azuay and Canar, where houses were overthrown. It was also felt in the northern part of Peru. Further shocks occurred in Ecuador and, on the night of Feb. 26, they were especially severe at Cuenca and in the neighborhood of Chimborazo at Ambato and Riobamba, all of them in the Andes.

AFRICA

The French Transafrican Railroad. French colonial activity has recently been manifest in studies for a railroad line to connect the French colonies of northern Africa with the French Sudan and French Equatorial Africa. A preliminary account written by Captain Niéger for *La Géographie* (Feb. 15, 1913, pp. 109-115) contains the results obtained during an expedition headed by this officer in 1912. The object was to reconnoiter the region between Insalah and Lake Chad which would be most suitable for the building of a railroad line; also to determine the route for a branch to start from the southwest corner of the Ahaggar mountains and reach the Niger between Gao-Gao and the Tilemsi River.

The region examined lies between the Greenwich meridian and 10° 30' E. It is bounded by parallels 21° and 12° N. The route followed started from Aulef, the ascent toward the Ahaggar uplift being made through the line of depression between the Muydir and Ahenet mountains. The line was then to extend toward Selet in a westerly direction. From this last point a number of routes determined by the break between the Adrar and Air mountains were surveyed. All these led to Agades, beyond which a relatively easy route to the shores of Lake Chad could be determined.

The varied activities of the members of the several parties into which the mission was divided bore results in the collection of valuable scientific and economic data. Altogether about 9,000 miles of new itineraries were surveyed. The geographical coordinates of 150 points were determined by astronomic or geodetic methods. Careful aneroid readings furnished data which sufficed for the construction of profiles and sections.

ASIA

Captain Leachman's Journey Across Arabia.* In November last the Council of the Royal Geographical Society made a grant to Captain Leachman toward the expenses of his proposed journey across Arabia. His object was to go right across the center of the country. He started on Nov. 3 and, writing

* The transliteration of place names, as given here, differs much from that on the Stieler map, the leading atlas map of Arabia, but it is not difficult to follow on that map the route of Leachman, who advanced from Bir Mēlosa in about 33° 20' N., 40° 10' E., in a generally southeasterly direction to Riadh in about 24° 40' N., 46° 45' E., then probably farther south and finally northeast to the Persian Gulf at Bahrein. It was evidently a notable journey, and further particulars will be received with interest.

from the Persian Gulf on Jan. 1, 1913, he gives a summary of his journey which appears in the *Geogr. Journ.* (Vol. 41, 1913, No. 2, pp. 147-148).

Leaving Damascus he traveled by the Baghdad Desert route to Bir Mélosa or Gahra, about half way to Baghdad. From there he struck southeast with four men, marched to Arar, then across the wells of Hazil to Leinah and south to Qusaibah, the first village in Quasin. From Aiyun he journeyed leisurely to Boreidah and thence to Shajra in Woshem and by Doreiye to Riadh. He spent a week in Riadh and saw much of this not very large town. From there he went down to El Hasa by a route to the south of Abu Jifan and thence to Ojeir and the Island of Bahrein, which he reached on Dec. 27. He then went north to Bushire. He learned much about the south country. The great Wadi of Riadh, Hanifa, undoubtedly reaches the sea south of Qatar. Wadi Duwasir and Wadi Nejran, called in its lower course Wadi Aftanah, both disappear in Robu el Khali, and Jebel Tuwariq runs all the way to Bisha and the bend of Wadi Duwasir.

King George V. Group in the Himalaya. The *London Times*, Weekly Edition (March 28, 1913), says that the King has acceded to the request of Mrs. Fanny Bullock-Workman for his consent to the naming of the new group of peaks at the head of Rose Glacier among the Karakoram Mountains of the Himalaya, the King George V Group. This cluster of high peaks, twelve miles long, was first seen and identified as such by Mrs. Bullock-Workman's 1912 expedition, the main results of which were described by the explorer in the *Bulletin* (Vol. 44, 1912, pp. 897-903). Three of these peaks were triangulated by her surveyor; and with the consent of the Viceroy of India Mrs. Workman proposes giving the name of Mount Hardinge to one of the highest of these mountains. This nomenclature in no way clashes with that established by the Indian Survey and is to be used on Mrs. Bullock-Workman's map, which, when published, will be the first detailed map of the Siachen or Rose Glacier, forty-seven miles long.

Results of the Abor Expedition. A paper by Mr. A. Bentinck on the geographical results of the Abor Expedition is printed in the *Geogr. Journ.* (Vol. 41, 1913, No. 2, pp. 97-114). The trip was not so successful geographically as it was expected to be, because the party, though repeatedly reaching excellent points for survey work, were prevented from seeing much by the haze that overspread everything. The Dihong River was ascended to a little north of 29° 45' N., but no very definite idea could be formed of the course of the river beyond that point. The identity of the Dihong with the Sangpo of Tibet was therefore not demonstrated. Mr. Bentinck himself entertains grave doubts as to the reliability of Kintup, whose work has long been relied upon as practically proving that the Sangpo and the Brahmaputra are the same river. On the other hand Sir Thomas Holdich, discussing Mr. Bentinck's paper, expressed the opinion that Kintup did prove that these rivers are really one and the same stream. He said that if Kintup was wrong we must get rid of this difficulty: "Certain marked logs were put into the Sangpo by him which were to float down to the Brahmaputra. I have always understood that they *did* reach the Brahmaputra and were identified. If so it is a little difficult to see how they failed to follow a continuous stream. I think we must say that we have known now for the last 75 years that the Sangpo and the Brahmaputra are one and the same river and the credit of that discovery belongs to Kintup."

Mr. Bentinck said that the term Abor is a name of which the Abors themselves are ignorant. It covers a number of tribes which do not recognize any close community of interests or policy. Contrary to earlier reports, he testifies that the Abors are generally peaceable and orderly.

AUSTRALASIA AND OCEANIA

The Northern Territory of Australia. The expedition consisting of Professors Baldwin Spencer and Gilruth, Dr. Wollnough and Dr. Breindl, sent out in 1911 to study the resources and general conditions of the Northern Territory, have thus far issued three bulletins. This region has hitherto not been systematically studied. Dr. Spencer studied especially the ethnography, Dr. Wollnough the geology, while Professor Gilruth investigated the possibilities of stock-raising, etc., and Dr. Breindl the health conditions of whites and natives. After preliminary work in and around Port Darwin the party went south to the rail-

road terminus at Pine Creek and thence to the Gulf of Carpentaria. In the settlements there the general health of the whites was remarkably good. No signs of physical deterioration were visible even in those who had spent several decades in the Territory. Life in the back country, with proper precautions, is healthy, the cool winter months affording recuperation from the effects of the damp heat of summer. In the mining townships, malaria and dysentery occur but are due to remediable conditions. Although within the tropics, this part of Australia is not really tropical and the usual tropical jungle is almost absent. Live stock were in excellent condition, and there is opportunity for large extension of this industry. The country seems unsuitable for sheep, but goats are valuable and supply both milk and meat. The so-called civilized native in the settlements is generally a useless loafer, while the native in the back-blocks, under the charge of a humane man, is a cheerful worker, invaluable to travelers and of the greatest service on cattle stations. The northern mining area has important potentialities, but further examination and more scientific methods of working are needed. Between Darwin and the Egypt River the soils except on the larger streams are mostly of poor quality but from the Egypt to McMinn's Bar on the Roper River the limestone and volcanic rocks afford rich soils. Lower down the Roper there are rich alluvial plains though the sandstone of higher lands yields a poor soil. The Edith, Katharine and Roper Rivers are perennial, and the plentiful rainfall of the wet season fills all the rivers and creeks. Irrigation on a large scale should be feasible. The prospecting expedition under Mr. W. J. McCaw to Caledon Bay on the northeast coast (Arnheim Land) did not find much encouragement as to mineral wealth, but much of the country was thought suitable for cultivation and an area along the Wilton River seemed suited for stock-raising. (*Geogr. Journ.*, Feb. 1913.)

Rubber Culture in Hawaii. Mr. Harrington, the Acting British Consul at Honolulu, reporting on the trade of Hawaii for the year ending June 30, 1912, says that rubber is steadily becoming more important among Hawaii's products. Many trees have been planted on the island of Maui, and 35,000 trees were tapped in 1912, yielding about 8,000 pounds of rubber. An output of 20,000 pounds is anticipated for 1913. Attention has been directed to an indigenous rubber tree (*Euphorbia lorifolia*) which grows in several localities, especially in the island of Hawaii, where one district has 6,000 acres averaging 75 trees to the acre whose product is 14 to 17 per cent. rubber and 60 per cent. resin (chicle). The latex is said to contain 42 per cent. of solid material, and one man can collect 16 to 30 pounds of crude product a day. (*Board of Trade Journ.*, Vol. 80, 1913, No. 852, p. 737.)

POLAR

ANTARCTIC

The Australian Antarctic Expedition.[†] Dr. Mawson's ship, the *Aurora*, reached Hobart on March 14. The further details given by those on board, together with one or two messages received by wireless from Dr. Mawson himself, make it now possible to gain a clearer knowledge of the circumstances which led to the loss of Lieut. Ninnis and Dr. Merz, and to the enforced detention of the leader in the inhospitable region of Adélie Land. On the arrival of the ship at the main base, Dr. Mawson had not returned from his expedition into the interior* and as it was necessary for the *Aurora* to proceed without delay to the second base for the purpose of bringing away Mr. Wild's party, it became evident that the leader might have to submit to a forced detention for a second winter. The whole party were ready to stay and search for their leader during the ship's absence, but in the end it was decided that six only should remain.

The *Aurora* left on Feb. 8, and only eight hours later received a wireless message saying that Dr. Mawson was safe, and instructing her to return to Commonwealth Bay, which she did. But a hurricane prevented all communication with the land, and the captain therefore decided to start again for Mr. Wild's base, as delay might prove disastrous to his party. Making all speed by the use of both steam and sails, and keeping on even at night, the *Aurora* threaded her way by narrow leads amid vast fields of pack-ice, and succeeded in carrying out her task.

* According to one account, Dr. Mawson had pushed inland almost to the position of the South Magnetic Pole; but whether on this or on a previous trip is not quite clear. [†] See map, p. 424.

She reached the second base on Feb. 23, and took off Mr. Wild's party, eight in number, who were all well. Mr. Wild reports the formal taking possession for Great Britain of the land between Kaiser Wilhelm Land and $101^{\circ} 31' E.$, under the name of King George V Land.* The coast-line trended almost due east and west, and was almost on the Antarctic circle.

From Dr. Mawson's messages it appears that he was accompanied on his last sledge expedition by Lieut. Ninnis and Dr. Merz, and that on Dec. 4, 1912, while exploring a new coast-line 300 miles south-east from the winter quarters, the young officer disappeared in an unfathomable crevasse, with a dog-team and almost all the food. The other two were left with scanty supplies and six starving dogs, on whom they chiefly subsisted while endeavoring to make their way back across the plateau. Bad weather impeded their progress, and on Jan. 17, Dr. Merz died from the results of insufficient nutrition. Dr. Mawson made his way alone to the hut, through snow and fogs, over heavily-crevassed ice, miraculously guided, as he says, by Providence. He arrived only a few hours after the departure of the *Aurora*, which does not seem to have been able to return after rescuing Mr. Wild.

Various accounts describe the weather conditions in Adélie Land as the worst experienced in any part of the Antarctic, and it is to be feared that Dr. Mawson and his six comrades may have a trying time during their enforced detention (*Geogr. Journ.*, Vol. 41, 1913, No. 4, pp. 355-356).

ARCTIC

The Crocker Land Expedition. Some facts relating to the personnel of the reorganized Crocker Land Expedition are here added to the information recently published in the *Bulletin* (Vol. 45, 1913, pp. 137 and 371). Donald B. MacMillan, the leader, won his spurs in Arctic work as one of Commander Peary's lieutenants during the successful quest of the North Pole in 1908-1909. He traveled over 2,000 miles with dog-team along the northern shores of Grant Land and the archipelago north of Greenland. It was from Cape Morris Jesup that MacMillan and Borup made their record march covering 336 miles in eight days. MacMillan is a graduate, and Honorary A. M., of Bowdoin College. He has spent the three and a half years since his return from the Arctic, studying, lecturing and traveling. The summers of 1910 and 1912 were given to exploratory, ornithological and archaeological work in and along the coast of Labrador. The year 1910-1911 and the past autumn and winter have been spent at Harvard University working in anthropology and practical astronomy. Mr. MacMillan is of Scotch ancestry and was born in Massachusetts 37 years ago.

W. Elmer Ekblaw is a native of Illinois, thirty years old and of Scandinavian ancestry. He took his degrees A. B. and A. M. at the University of Illinois, specializing in geology, botany and ornithology. He has been an instructor in geology in that institution; has done much field work and will have charge of the geological and botanical work of the expedition.

Ensign Fitzhugh Green, U. S. N., graduated at the Naval Academy, Annapolis, four years ago, at the age of twenty years. He was born in Missouri. His experience has been largely at sea. He was in command of a turret on the U. S. S. *Michigan* and has likewise done mapping of coast lines. He has taken special studies during the past year in cartography, meteorology, seismology, terrestrial magnetism and wireless telegraphy, and will have charge of these branches of the work.

Maurice C. Tanquary is a native of Wisconsin, was graduated from the University of Illinois in the class with Ekblaw and continued his university work till he received the degree of Doctor of Philosophy. He specialized in zoölogy, more particularly entomology, and will have charge of the zoölogical work of the party including fishes and mammals. He is 31 years old.

In addition to the strictly scientific staff, a surgeon will be selected. The party also includes an expert electrician who will have charge of the wireless and other electrical outfit at headquarters; he will also make meteorological and seismological observations during the absence of Mr. Green. A good mechanic, boat-builder and cook has also been engaged. The expedition will start north in

*That is, to the eastern extremity of Knox Island as it appeared on Wilkes's chart.—EDITOR *Bulletin*.

July under the auspices of the American Museum of Natural History and the American Geographical Society with the co-operation of the University of Illinois and the assistance of the United States Navy Department, the United States Department of Agriculture (through the Weather Bureau), the United States Coast and Geodetic Survey, the United States Geological Survey, the United States Bureau of Mines, the Carnegie Institution of Washington (through its Bureau of Terrestrial Magnetism), Yale University, Colgate University, Bowdoin College and Worcester Academy. About 130 subscribers have helped to finance the expedition. Publishing houses and other firms, by direct donations or concessions in prices, have aided substantially to complete the equipment.

Wireless telegraphy is to be utilized for the second time at the land headquarters of a polar expedition. This will be used in connection with the fully equipped weather bureau station that will be established at the home base of the party on Flagler Bay (Kane Basin.) It is hoped in this way to keep the land base in daily communication with the expedition. Wireless has been an effective part of the outfit of the Mawson Antarctic party.

General Result of the Norwegian 1911-1912 Arctic Expedition. Messrs. Arve Staxrud and Adolf Hoel, who led the 1912 parties, published a summary of their work in *La Géographie* (February 15, 1913, pp. 99-108). The expedition left Tromsø on June 25 and reached Green Harbor, Spitzbergen, on July 3. The first stop was made here until July 16. . The west coast between South Cape and Bell Sound was found to be lined by floe ice some 40 miles wide. Wood Bay was attained on August 1. During this last part of the trip the explorers examined King Bay where the nunataks of the inferior section of the large glacier were visited in order to determine the boundary between the granitic zone of north-western Spitzbergen and the Devonian and Carboniferous regions of the south and east. The coast becoming icebound toward the end of the month the return to Green Harbor was made on August 27, Tromsø being attained on September 6.

A part of the results of the geodetic and topographic work was summarized on a map on a scale of 1:50,000 with contour curves, interval 50 meters. About 1,000 square miles of area were covered in this manner. This region lies between the west coast and a line joining Coles Bay to Axel Island on the east.

The original program consisted in the preparation of a 1:50,000 map which would include the region bounded on the north by Ice Fiord and by Bell Sound and Van Nijen Bay on the south. For this purpose a triangulation network was determined. Advantage was taken of the rapid methods of surveying obtainable by the use of light instruments provided with easily legible graduation scales and by the use of photography for detail work. The scale of 1:50,000 was suggested by the fact that the map is not only destined to form the basis of a scientific survey of the country but also to provide a hydrographic document of practical utility for the use of navigators. It is furthermore intended to serve in prospecting and in the delimitation of mining areas. This last need was foreseen in view of the discovery of coal deposits in the region.

Important geological reconnaissance was undertaken by the geologists of the expedition. The Carboniferous of the peninsula between Green Harbor and the coast was explored. Stratigraphic and tectonic investigations were carried on in the Bragger Peninsula. The general features of the uplifted region lying between King Bay and Wood and Ekman Bays were determined. The southerly extension of the Back Bay fault line was followed and a study made of the shores of St. John Bay.

In addition, a detailed plan of the region characterized by thermal springs near Back Bay was compiled. As many as ten volcanic necks between Wood and Rock Bays were noted. All this information will ultimately be represented on a geological map, the only compiled portion of which consists of the peninsula between Ice Fiord and Bell Sound, this section having been drafted by the members of the expedition on a scale of 1:50,000.

EDUCATIONAL GEOGRAPHY

Geography at Columbia's Summer Session. During the summer session of Columbia University, the following courses in geography will be given by Pro-

fessor D. W. Johnson: "Physical Geography and its Economic Aspects," an elementary course involving laboratory and field work; and "Physiography of the Western United States," a course designed for those who desire more advanced training in the principles of physiography as well as an acquaintance with the surface features of the western part of our country.

Courses dealing more directly with the methods of teaching geography in elementary schools will be given by Dr. C. T. McFarlane and Miss C. B. Kirchwey (by the latter: "General Geography" and "Continental Geography for Schools").

The geographical equipment at Columbia University has been largely increased during the past year. Over fifty wall maps have been prepared by mounting together grouped sheets of the topographic surveys of different nations. The cartographic collections have been further increased by an extensive series of German maps, valued at \$1,000, purchased by the Germanistic Society of America under the direction of Professor Penck, and now deposited permanently with the Department. Seven large map cases, similar to those made for the American Geographical Society, are in process of construction, and a special map room will be provided as soon as the cases are ready for use.

Through gift and purchase the Department has secured more than 500 excellent photographs of American and European land forms, which will be mounted for class use with maps and explanatory descriptions. Among the large framed views recently secured are several which were on exhibition in the lecture hall of the American Geographical Society last fall, and two large oil paintings of scenery in the Glacier National Park. The Department has just learned informally of a gift of \$1,800 intended for the development of its lantern slide collection; and the Departmental library has benefited by a gift from the Germanistic Society for the purchase of books on German "Länderkunde." One of the lecture rooms in Schermerhorn Hall will be equipped as a geographical laboratory during the summer.

International Exhibition of Wall Maps. An international exhibition, educational diagrams, etc., for use in schools was held at Rome in May under the auspices of the "Associazione per la Cultura Artistica Nazionale." The purpose was to give publishers of all nations an opportunity to exhibit their products in that city. Similar exhibitions have from time to time been held in other countries. Most notable among them were the exhibitions of the Royal Geographical Society in London and of the Brooklyn Institute of Arts and Sciences, in Brooklyn, New York, Boston and other cities.

A Course in Topographic Mapping. Mr. A. M. Walker, Topographic Engineer of the U. S. Geological Survey, spent the time from March 14 to April 5 in giving a course in topographic mapping to advanced students in the Department of Geology of Northwestern University.

ECONOMIC AND COMMERCIAL GEOGRAPHY

A Coal Atlas of the World. An atlas containing about 70 colored maps, 14x20 in. in size, will accompany the 1200 pp. monograph on the coal resources of the world which is being published by the Executive Committee of the XIIth International Congress of Geology under the editorship of Messrs. William McInnes and D. B. Dowling. The atlas sheets will show the distribution of coal in the different countries, the extent and depth of each basin being indicated whenever possible. The geology will be illustrated by colors in many cases, and several sections will be reproduced. The following partial list of the atlas maps will give an idea of the wide scope of the compilation: Austria will be represented by 8 geologically colored maps of Austrian coal fields; France by 27 geologically colored maps and sections; Great Britain by a map showing coal areas in red; the United States by a map on which the distribution of the different classes of coal will be shown; China, Manchuria and Korea, each by two maps showing distribution of coal fields; Turkey, India, the Dutch East Indies, New South Wales and Western Australia each by a map of the location of coal fields; Sweden, Rumania, Servia, South Africa, Japan, and Queensland each by a colored map conveying similar information; Canada will be represented, in addition to a general map showing the distribution of coal areas, by a number of regional maps

among which those of the Maritime Provinces, Saskatchewan, Alberta and British Columbia as well as the more detailed Crownsnest, Blackmore and Cape Breton sheets will be noteworthy. In addition a number of maps illustrating the reports from Germany, Russia and the Central and South American countries will be included. Some 120 maps will furthermore be scattered throughout the text of these reports, so that the whole work will contain about 200 maps.

From the standpoint of economic geography the monograph will be as valuable to geographers as it will be indispensable to the technical world. While over two years have been spent in its preparation, the several reports taken together will give the world results acquired in a far longer period devoted to the investigation of the coal resources and reserves of the globe. In some cases, actual field work had to be undertaken to elucidate some knotty point that affected the thoroughness of the report. Even the Arctic and Antarctic regions are discussed in the light of our present knowledge. Except in the case of iron, the investigation of which was conducted under similar auspices three years ago, no other mineral will have been so thoroughly examined with regard to its usefulness to mankind.

LEON DOMINIAN.

Further Change in the Transatlantic Route. As a result of the meeting held at Brussels in March all the North Atlantic passenger lines represented in the conference agreed to a change of route from April 15, the anniversary of the sinking of the *Titanic*. The new summer route, which went into effect on Jan. 15 last, meant that both eastward and westward steamers would cross the meridian of 47° W., one degree further south than a year ago. The present change means that the liners will go even further south. In past years the routes which went into effect on Jan. 15 were followed as a rule until August, when more northerly courses were brought into force. A system has also been arranged for modifying the routes further in case of abnormal ice conditions.

This season the U. S. Revenue cutters *Seneca* and *Miami* have established a patrol to keep in touch with the ice fields and icebergs drifting down to the neighborhood of the Grand Bank of Newfoundland and to determine their southerly, easterly and westerly limits, sending wireless messages particularly of ice in the neighborhood of the transatlantic lanes. (*London Times*, Weekly Edition, April 11, 1913.)

OCEANOGRAPHY

Ocean Temperatures Along the West Coast of North America. Dr. George F. McEwen, Physiologist of the Marine Biological Station at San Diego, has recently published a valuable article explaining the cause of the cold water belt lying along the Pacific Coast.*

There is a popular notion that a "warm Japan stream" washes the coast of California—a notion that persists despite the fact that sea-faring men and students of oceanography have long known that for hundreds of miles along the California coast the temperature of the sea water is really colder than that of the mid-Pacific. On modern maps this body of cold water slowly moving southwest is called the California Current instead of the Japan Stream, for the latter becomes indistinct and is lost as a definite stream in the vicinity of the Aleutian Islands. This cold water along the California shore not only lowers the temperature of the westerly summer winds and thus saves the coast from the oppressive heat of the eastern summers, but also is undoubtedly a large factor in causing the fog which frequently hangs along the shore to the perplexity of coast trade steamers.

Dr. McEwen's scholarly paper, based on a new theory of oceanic circulation developed by Ekman of Christiania (1905-6), may be summarized very briefly as follows:

Numerous observations, over a long period, have fully established the fact of abnormally cold water along the west coast of North America. Various theories have been advanced to explain the source of this unusually low temperature, the most diverse of which theories are enumerated here. Dall (1882) attributed the low temperatures to the cooling of the Japan Stream in its long and slow passage through the North Pacific. Richter (1887) attributes the cold water to a Polar current which crowds the Japan Stream off shore. According to Bishop (1904)

**Internationale Revue der gesamten Hydrobiologie und Hydrographie*, Band V, Heft. 2 and 3, 1912, pp. 243-285.

its source is to be found in the water cooled by contact with the front of the great continental glacier of the Antarctic regions—this cold water, he supposes, creeps northward along the bed of the Pacific Ocean to be finally thrown by the rotation of the earth against the coast of North America. Holway (1905) called attention to the fact that the surface water to the northward of Cape Mendocino is warmer instead of colder as assumed by Dall and Richter—and thus shuts out the existence of surface currents from the north. He attributes the low temperatures to the upwelling of cold water from the ocean depths. That the vicinity of Cape Mendocino has the coldest water along the coast he says is due to the influence of a submarine valley which heads near Cape Mendocino. Dr. McEwen bases his discussion on recent work of Ekman, who, using the theory previously advanced that constant winds will establish an ocean current, adds to previous calculations a consideration of the deflection due to the earth's rotation and shows that the wind-driven current will be deflected off shore, which deflection will force an upwelling of cold bottom water along the shore.

The extremely interesting and convincing point in Dr. McEwen's article is found in his mathematical calculation of the temperatures that ought to exist at San Diego, Pt. Conception, San Francisco and Cape Mendocino, because of the upwelling that theoretically should be produced according to the wind velocities of the U. S. Pilot Chart records.

Dr. McEwen's mathematically calculated temperatures based on Ekman's theories closely agree with the actually recorded temperatures at each of the four stations mentioned. These temperatures, it must be remembered, are decidedly abnormal, and, considering the complexity of the problem, this close agreement of observation and theory is strong evidence for the correctness of the new explanation advanced. Dr. McEwen is extremely modest as well as scientifically careful in concluding "that from the results already obtained it would be profitable to carry on a more detailed and quantitative investigation following the lines suggested in the present paper."

As one of the previous writers on the subject the present reviewer of Dr. McEwen's paper feels the question has been advanced by him from the stage of theorizing about qualitatively known conditions to the plane of accurate quantitative measurement of facts and of mathematical demonstration. It is a matter of great satisfaction to the student of physical geography that the whole subject of oceanic circulation is emerging from the speculative stage to that of scientific investigation.

This brief review of a rather technical and mathematical paper can give but a generalized summary of what is not only an important contribution to the world's knowledge of oceanography but also a fine example of the thoroughly scientific work being carried on at the Marine Biological Station at San Diego.

R. S. HOLWAY.

OBITUARY

E. G. RAVENSTEIN. This distinguished cartographer died in England in March. He was born at Frankfurt on Main on Dec. 30, 1834, and belonged to a family that for many years had been known as cartographers of high rank. At the age of twenty years he went to England and his ability as a cartographer obtained for him a position in the Intelligence Department of the War Office, which he filled from 1855 to 1872. Much of his preliminary training had been obtained as a pupil of the famous Dr. Petermann of Gotha, Germany; and Ravenstein had important influence in the improvement of British cartographical methods. He gave much of his time for several years to the compilation, for the Royal Geographical Society, of a large map of eastern Equatorial Africa, which was published in 1884. Though now nearly thirty years old this most careful work is indispensable to the student of the evolution of African geography. For several years he was a member of the Council of the Royal Geographical Society and was President of the Geographical Section of the British Association in 1891. Among his publications were "Vasco da Gama's First Voyage," published in 1898; a "Systematic Atlas," 1894, one of the best school atlases produced in any country; and "Martin Behaim, His Life and the Globe," 1908, the result of many years of research.